Doctors on Saba. Health care and disease in a Caribbean family practice

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In this thesis a number of studies are described which relate to Saba's health care system, which proved to be sufficient for making recommendations regarding its improvement.

After the introduction, **Chapter 1** discusses the history of Saba. It is assumed that the Island was first mapped in 1493 during one of Columbus' voyages. Between 1640 and 1816 the Island was governed by the English and the Dutch in turn from the neighboring islands of St. Eustatius and St. Maarten. After 1845 Saba became, within the Netherlands Antilles, part of the Kingdom of the Netherlands and was governed until 1983 by a Lieutenant Governor from St. Maarten. Since then Saba enjoys an autonomous position with its own Lieutenant Governor and, since 1985, its own representative in the "Staten der Nederlandse Antillen" (Antilles parliament). Around 1870, an emigration wave to the USA began due to a deterioration in the economic situation, followed in the period between 1915 and 1924 by a similar wave of emigration to the islands of Curaçao and Aruba. This has led to a situation whereby nowadays six times as many Sabans live off the Island as on it.

Chapter 2 provides a description of the Island, which lies in the North-Eastern part of the Caribbean, and of its population data up to 1986. The mixed English-speaking population, probably originating from West- Africa and the British Islands, has been living on an extinct volcano with a sub-tropical climate since approximately 1640. The number of people has stabilized since 1960 to some 1000, consisting of relatively few teenagers and many over-65s, living in four villages.

The number of noncaucasians just exceeds 50%; a little more than half of the population lives in a conventional family situation and five families (Hassell, Johnson, Zagers, Simmons, Peterson) make up more than half of the total population on the Island. Both the birth and mortality rates have declined during the last thirty years, from 25.5 to 13.5 and from 14.6 to 11.3, respectively. Two-thirds of the population is Roman Catholic, the rest belongs to other denominations. Approximately 90% of the Saban children between 3 and 18 years go to school. Housing on Saba is by and large good. Furthermore, the number of tourists has quadrupled to over 27,000 during the last 15 years.

Two-thirds of the working population is employed in the civil service, with a very small section employed in agriculture, cattle breeding and fishing. The number of people with a so-called "double job" is quite striking. As far as the infrastructure is concerned, the Island has an airport, a 7 miles (11kms) long road which connects the villages, electricity and a modern postal and

telecommunications system. Financially the Island is almost totally dependent on third parties. Justice is carried out according to Netherlands-Antillian law.

The account of the history of Saba's health care system can be found in **Chapter 3**. The most relevant information on this subject originates from 1884 onwards. Since 1863 there was regularly, and since 1914 always, a government physician working on the Island. The names of these physicians have been traced as far back as the beginning of this century and have been mentioned here. From 1900 to 1940 untrained midwives worked on Saba, until 1953 trained midwives, and since then the government physician has carried out this work.

Since 1975 the Island has been visited regularly by medical specialists, in particular an internist, an ophthalmologist, a dermatologist and an ENT-specialist. Prior to this time, all referrals had to be made to another place. Nursing is almost always carried out by local, untrained women. The provision of a thorough training and post-graduate courses or other training for physicians and nurses has been under discussion for quite some time. The Island has had an official hospital since 1925. Due to a variety of circumstances this has had a number of locations. Up to 1976 the Island was provided with medicines in a rather improvized fashion; since then this has taken place via a pharmacy on St. Maarten. Since 1946 specific attention has been paid to the care of the elderly. A nursing home was opened in 1979. Apart from the strikingly common skin tumors, Saba has not otherwise been characterized by the frequent occurrence of any special diseases.

Chapter 4 gives details concerning Saba's current health care system, largely organized following the Dutch model. Since 1 April 1983, Saba has had a self-governing Medical and Public Health Service. It is, however, unclear to whom the government physician is responsible. There is no general (government-regulated) health insurance. Fifty percent of Saba's population has the right to a medical card, which entitles the holder to free medical care; twenty percent is insured at work, twenty percent is insured in a way which is in accordance with private health insurance in the Netherlands and ten percent is uninsured for medical costs. Besides regular visits by an Inspector of Pharmaceuticals and Pharmacies, there is no further inspection. Since the late seventies there have been three medical institutions: a modern 12 bed hospital, a 25 bed nursing home and an out-patient clinic.

In the period 1983-1986 the mean number of patients admitted per year at the hospital was 130, the mean bed-occupation was 29.4 percent. More than one third of the admission-diagnoses were related to "diseases of the skin and subcutaneous tissue". The bed-occupation of the nursing home is almost 100 percent. A total of 35 persons were employed in the health care system on Saba, which has virtually no voluntary, or formally trained staff.

The work of the government physician is quite varied. In addition to preventive, curative, and obstetrical care, his duties include public health activities as well as the examination of employees for the government upon initial service entry and when ill. Occasionally, his duties include dentistry, physiotherapy, nutrition, pharmacy and even veterinary medicine. The mean number of physician-patient contacts was approximately 6000 per 1000 people per year.

Some noteworthy facts are that Saba's immunization coverage (diphtheria, whooping cough, tetanus, poliomyelitis, measles) is nearly 100 percent; that a third of the fertile women use contraception in consultation with the physician and that the transmission risk for dengue is low/moderate. There is no regular inspection of food, drinking water, or pollution, and the garbage dump is situated very close to a residential area. Disaster relief in the event of an approa-

ching hurricane is well organized on Saba.

In **Chapter 5** the objectives of this study have been formulated.

Chapter 6 provides a description of every physician-patient contact as well as all further activities of the government physician during two working days in 1985, which were chosen at random. On average he worked just over eight hours a day, a third of which time was spent on telephone calls and on administrative and organizational duties. The number of physician-patient contacts was high in relation to the size of Saba's population of approximately 1000 people. Common reasons for encounter were: general check-up, measuring of blood pressure, treatment of chronic skin ulcer and other wounds, and the removal of skin tumors.

The general practitioner on Saba is also the medical officer for the government and for private institutions and he also devotes part of his time to patients in the hospital and the nursing home.

Chapter 7 is a desciption of the participation in the part of the Transition Project from the Department of General Practice of the University of Amsterdam which was carried out on Saba. The relationship was studied between the reason for encounter with the general practitioner, his diagnosis and diagnostic/therapeutic interventions and the changes which occured during a complete episode of illness, whereby use was made of the International Classification of Primary Care (ICPC). The demographic data collected during this study have been incorporated in chapter 2. The mean number of doctor-patient contacts (encounters) per person per year amounted to 5.73, which is considerably higher than in the Transition Project, namely 2.9. The two age groups 0-4 and over 65 were the most frequent visitors to the surgery on Saba. No differences could be traced in the number of encounters with respect to ethnic background and geographic location played a marginal role in visits to the general practitioner.

In the Transition Project a distinction was made between the reason for encounter, the diagnosis and the relevant interventions by the general practitioner at the beginning and during the follow up of an episode. On Saba, the reason for encounter at the beginning of an episode was usually a symptom or a complaint. The Top 5 of these reasons for encounter at the beginning of an episode consisted of: general administrative reason, lacerations/cuts, cough, sore throat and headache. In the course of the episode the Saban patient tended to request more often the checking of lacerations/cuts and blood pressure, medication, the results of tests carried out and family planning than in the Transition Project. There was therefore evidence of a transition towards the process components of the ICPC. The Top 5 reasons for encounter in follow up encounters were: treatment of lacerations/cuts and chronic skin ulcers among patients admitted to hospital at the general practitioner's initiative, measuring of blood pressure, checking (after stitching) and treatment of lacerations/cuts.

In establishing a diagnosis at the beginning of an episode the first component (symptoms and complaints) of the ICPC was relatively widely used; during follow up of the episode there was a transition towards the seventh component (diagnosis and disease), similar to that observed in the Transition Project. The Top 5 diagnoses made at the beginning of an episode consisted of: upper respiratory infections, lacerations/cuts, no disease, general administrative matters and cystitis. The Top 5 diagnoses during follow up encounters were: hypertension, chronic skin ulcer, lacerations/cuts, no disease and diabetes mellitus.

The general practitioner's interventions on both Saba and in the Transition Project consisted, at the beginning of an episode, principally of diagnostic interventions. On Saba, more than 50%

of these activities comprised of the measuring of blood pressure and physical examinations (lungs, heart, abdomen, etc.); one-third comprised of the provision of medication (of which two-thirds was in the form of prescribing medicines). The large amount of administrative duties on Saba was striking, much greater than in the Transition Project. The other important interventions in the initial phase of the episode were: health education, therapeutic counseling and the writing of letters of referral. In the follow up of the episode the accent of the general practitioner's activities showed a transition from diagnostic to therapeutic interventions. The number of physical examinations and giving advice (especially at the well baby clinic) remained considerable. The prescribing of medicines increased and bandages were often applied due to the large number of lacerations/cuts and cases of chronic skin ulcer. Finally, the interventions in this phase of the episode consisted of: therapeutic counseling, administration, and the writing of letters of referral. The distribution of the episodes over the ICPC chapters on Saba is largely similar to that in the Transition Project. However, it did turn out that the general practitioner on Saba saw much less variation in the morbidity pattern per year per 1000 patients than his colleagues in the Transition Project. Particularly seldom were seen: haematological problems, acute abdominal pains, irritable bowel syndrome, cardiac problems (such as pain in the chest, chronic ischemic heart diseases and myocardial infarction), multiple sclerosis, migraine, psychological problems (in particular feelings of anxiety and nervousness, disturbances of sleep , hyperventilation, psychogenic enuresis and eating problems), sinusitis, chronic bronchitis/emphysema, scabies, pediculosis, acne, ureter stones, delivering babies, menstrual problems, venereal diseases among women, prostatitis, phimosis and social problems (in particular child-raising and the coming to terms with the loss or death of a partner). The general practitioner on Saba saw a very limited number of patients with carcinoma per year per 1000 patients, with the exception of skin cancer.

On the other hand it was striking that the general practitioner on Saba actually saw several diseases, considerably more per year per 1000 patients, than his colleagues in the Transition Project, namely: gastro-enteritis, constipation, caries, cirrhosis, foreign body in the eye, cataract, glaucoma, pterygium, deafness, hypertension, atrial fibrillation, cerebrovascular accidents, traumas, congenital and acquired foot disorders (metatarsus adductus, genu valgus, genu varus and pes planus), epilepsy, psychosis, mental retardation, acute tonsillitis, pneumonia, asthma, skin tumors, insect and animal bites, diabetes mellitus, obesity, vitamin deficiency, cystitis, gonorrhoea and benign prostatic hypertrophy.

The Top 5 of the most common episodes on Saba are: no disease, upper respiratory infections, hypertension, lacerations/cuts and administrative duties. The prevalence of cataract, glaucoma, diabetes mellitus, lacerations/cuts and skin cancer on Saba is higher than has been reported in various morbidity studies. The prevalence of hypertension among Saban adults coincides with that for the Caribbean region.

In this study referrals to medical specialists were made chiefly to the ophthalmologist, surgeon, gynaecologist, ENT-specialist and orthopaedic surgeon. A quarter of the referrals were made to the hospital on Saba, where more than 50% of the referrals were related to problems of the digestive system, the musculoskeletal system, the skin and pregnancies/deliveries.

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from July 1 1984 to July 1 1985, 295 patients were actively referred to a medical specialist, which is approximately in accordance with the figures in the Transition Project for the Netherlands. In 228 cases (77%), the patient was referred for the first time, and in 67 cases (22%), the patient was given a repeat referral. The total rate of referral was 4.6 per 100 encounters. 93 patients (32% of the total of all referred patients) were referred to a specialist who visited Saba, and 78 patients (34% of patients referred for the first time) were admitted to a hospital off-island.

In the evaluation of the comparison between the diagnosis of the general practitioner and the diagnosis of the specialist, the latter was considered to be correct. In nearly two-thirds of all cases, the general practitioner made a diagnosis. In 90% of all cases, the level of his diagnosis was correct, in 8% this level was too high, and in 2% it was too low. A year and a half after referral, 56% of patients referred for the first time had been cured, 20% had benefitted from the referral, 15% had not (yet) benefitted from the referral, 3% had died of the disease for which they had been referred, and in 5% of cases no data were available due to a change of address, etc. 15% of the patients referred for the first time returned to the general practitioner without a solution to the problem for which they had been referred.

On Saba, the causes of death of 285 of the 321 patients who died in the period 1962-1985 were traced. The discussion takes place in **Chapter 9**. Tuberculosis has not occurred as a cause of death during the last two decades. Of the 44 neoplasms (as cause of death), 20 were located in the gastro-intestinal tract. Death resulting from intracranial vascular disease has remained roughly constant for the last 25 years, while death from arteriosclerotic and degenerative coronary disease has decreased. Further, there has been a decrease in the number of deaths in the first week of life. Maternal death has not occurred on Saba since 1953.

In **Chapter 10** the skin tumors are discussed. 382 skin tumors were analyzed, removed from 140 people on Saba during the period 1965-1986. As only one melanoma was registered, all attention was focused on basal cell carcinoma, squamous cell carcinoma and keratosis solaris. The incidence of basal cell and squamous cell carcinoma on Saba is much higher than stated in the literature. The localization of the tumors coincides with that in other parts of the world.

In **Chapter 11** the analysis of data on the growth of babies who visited the well baby clinic in the period 1980-1986 is discussed. Further, a single measurement of weight, height and skinfold of Saban schoolchildren was carried out in 1985. The nutritional status of the Saban babies is comparable to a similar population in an industrialized country, while the Saban schoolchildren tended to be even heavier for their height than comparable age groups in these countries. In comparison to growth data for Saban schoolchildren from 1956, it appears that height and weight have increased in this age group over the last 30 years.

Chapter 12 describes the conclusions on the basis of the chapters of this thesis, on which recommendations for the improvement of the organization of Saba's health care system are based.

The ten most important recommendations are:

1. Agreements must be made as to whom the government physician is accountable.

2. A satisfactory contract of employment should be drawn up with the physician prior to his

commencing work on Saba.

3. The period specified in the above agreement must be limited to a maximum of three years, with the possibility of a six-month extension. In special cases further extension may be granted, provided satisfactory agreement is reached with regard to post graduate education and training.

4. The Director of the Department of Public Health and Environmental Hygiene on Curaçao should be more involved in the organization of Saba's health care system, and certainly in the event of disputes between the local government and the physician and any ensuing problems.

5. More scientific research needs to be carried out with respect to cataract, glaucoma, diabetes mellitus, hypertension, malignant skin tumors and lacerations/cuts.

6. In connection with the high incidence of basal cell and squamous cell carcinoma, more attention should be paid to protection against sunlight, such as the use of headgear, UV protective creams, etc.

7. It must be stipulated that St. Maarten remains the first referral point for Saba, with Curaçao and Puerto Rico as second for those specialists not present on St. Maarten. Specialists should continue to visit Saba.

8. In connection with the high prevalence of caries, the dentist needs to work on Saba for two days every two weeks, with attention also being paid to school dental care.

9. A subtle form of nutritional education is needed.

10. Legal provisions need to be made in the Netherlands Antilles, and therefore on Saba, with regard to general medical insurance.

Samenvattingen

In dit proefschrift worden enkele studies beschreven met betrekking tot de gezondheidszorg van Saba, die voldoende bleken te zijn om aanbevelingen te geven tot verbetering daarvan.

Na de Inleiding wordt in **Hoofdstuk 1** de geschiedenis van Saba besproken. Aangenomen wordt, dat het eiland in 1493, tijdens een reis van Colombus, voor het eerst in kaart is gebracht. Van 1640 tot 1816 is het afwisselend geregeerd door Engelsen en Nederlanders vanaf de buureilanden St. Eustatius en St. Maarten. Na 1845 behoorde Saba, binnen de Nederlandse Antillen tot het Koninkrijk der Nederlanden en het bestuur viel tot 1983 onder een Gezaghebber van St. Maarten. Sinds dat jaar heeft Saba met een eigen Gezaghebber een autonome positie, met sedert 1985 een eigen vertegenwoordiger in de Staten der Nederlandse Antillen. Rond 1870 volgde, vanwege een verslechtering van de economische situatie, een emigratiegolf naar de USA, ge-

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